

### Remarks

Claims 1-24 are pending in the present application. By this Amendment, Applicants have amended claims 1-3, 8, 9, 11, 13, 14, 16, 17, 19, 20, 22, and 23. Applicants respectfully submit that the present application is in condition for allowance based on the discussion which follows.

Applicants note that the Restriction Requirement has been maintained. Applicants respectfully submit that upon full consideration of the present Amendment and the Remarks to follow, claim 1 will be found to be a novel linking claim for all pending claims and accordingly, respectfully request that upon allowance of claim 1, claims 16-23 be rejoined and examined in the present application.

The drawings were objected to under 37 C.F.R. § 1.83(a). By this Amendment, Applicants have submitted a new formal drawing thereby obviating the objection to the drawing. The replacement formal drawing is identical to the original with the exception of including an identification of the scale, namely that "\_\_\_\_" is "1  $\mu\text{m}$ ". The addition of the scale does not constitute new matter as the present specification discloses how to make the depicted particles and their composition. Therefore, from the original drawing and the specification one skilled in the art could deduce the now identified scale.

The Abstract of the Disclosure was objected to for including informalities which, by this Amendment, Applicants have submitted a new replacement Abstract of the Disclosure thereby obviating the objection to the Abstract.

Claim 11 was objected to as allegedly being in improper dependent form. By this Amendment, Applicants have amended claim 11 to more clearly recite Applicants' invention and to more clearly define that the composition comprises at least 80% by

mass of compounds (A) and (B) in the particles and no more than 20% of compounds (A) and (B) in solution. Applicants respectfully submit that claim 11 now more clearly limits the subject matter of claim 1, in that claim 1 recites that the composition comprises a dispersion of particles (p) comprising (A) and (B), and claim 11 (currently amended) now recites that an aqueous medium of the aqueous dispersion of particles (p) may further comprise additional amounts of compounds (A) and (B) dissolved in the aqueous solution in an amount of up to 20% of the total amount of (A) and (B) present in the composition. Accordingly, Applicants respectfully request that the objection to claim 11 be withdrawn.

Claims 1-15 and 24 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to meet the written description requirement. It was alleged that claim 1 is drawn to a composition comprising a dispersion of particles which contain, in association, polycyclodextrin molecules and macromolecules of polysaccharides which comprise "groups (G)" wherein the groups are capable of forming inclusion complexes with the cyclodextrins and that claim 7 further defines said "groups" as being aliphatic groups, linear or branched, having 8-18 carbon atoms. The Examiner alleges that neither the term "groups" nor "C<sub>12</sub> aliphatic groups" is mentioned in the present specification.

Applicants respectfully submit that the term "groups" and "C<sub>12</sub> aliphatic groups" are fully described in the present specification in order for one of ordinary skill in the art to understand the claimed invention. A C<sub>12</sub> aliphatic group is a specific form of a C<sub>8</sub>- C<sub>18</sub> aliphatic group recited in claim 7 and described in the present specification. Further, the specification defines groups (G) as being an aliphatic group capable of forming inclusion

complexes with cyclodextrins. One of ordinary skill in the art based on the claimed invention and the specification would know what these terms mean. Submitted with this Amendment, Applicants have filed a Rule 132 Declaration by co-inventor Catherine Amiel (hereinafter "Amiel Decl."). In the Amiel Decl., ¶ 6, one of ordinary skill in the art would know that a C<sub>12</sub> aliphatic group corresponds to a specific subgroup of the C<sub>8</sub>- C<sub>18</sub> aliphatic group disclosed in the present specification. Accordingly, the specification which discloses that the groups G may be a C<sub>8</sub>- C<sub>18</sub> aliphatic group would necessarily include C<sub>12</sub>, a 12 carbon aliphatic group. Additional, collaborative evidence is cited in the Amiel Decl. and attached in Appendix A, namely a reference entitled *Pharmaceutical Applications of Cyclodextrins*, which further supports the fact that one of ordinary skill in the art would understand that the present specification fully supports the claimed terms "groups G" and "C<sub>12</sub> aliphatic group". Based on the foregoing, Applicants respectfully request that the rejection to the claims under 35 U.S.C. § 112, first paragraph, be withdrawn.

Claims 1-15 and 24 were rejected under 35 U.S.C. § 112, second paragraph. Applicants respectfully submit that in view of the claim amendments and the following remarks, all claims are in full compliance with the requirements of 35 U.S.C. § 112, second paragraph.

With regard to the phrase "at least" as recited in claims 1, 3, 11, 12, and 14, Applicants respectfully submit that the claim amendments now more clearly recite the terms, percentages, and amounts so as to unambiguously recite the claimed quantities in compliance with the requirements of 35 U.S.C. § 112, second paragraph.

With regard to the phrase "capable" which was alleged to render the claims containing the phrase indefinite, Applicants respectfully submit that the phrase "capable" in the context of the claimed invention and, and in view of the specification, would be fully understood by one of ordinary skill in the art. The Amiel Decl. describes that the term "capable" would be understood by one skilled in the art that the claimed compound may, but not necessarily, will guarantee that all macromolecules are complexed due to the respective groups G complexed with the cyclodextrins (see Amiel Decl., ¶ 7). The presence of complexes of cyclodextrins and macromolecules in the claimed composition is compulsory, i.e., necessary, as claimed. However, it is possible that some of the macromolecules are not complexed in accordance with the claimed invention. One such case is, for example, when there is not enough cyclodextrins in the claimed composition although the free macromolecules comprising groups G are nevertheless capable of forming inclusion complexes. Accordingly the term "capable" is scientifically correct and accurately describes the claimed macromolecules. Therefore one of ordinary skill in the art would not find the claims indefinite. Accordingly, Applicants respectfully request that the rejection to the claims for including the phrase "capable of" be withdrawn.

Claim 9 was rejected for reciting various ratios of compounds (A) to compounds (B) present in the particles (p). By this Amendment, Applicants have amended claim 9 to more clearly recite the ratios of compounds (A) to (B) present in particles (p) thereby obviating the rejection to claim 9.

Finally, with regard to claim 14, Applicants respectfully submit that claim 14, as amended, clearly defines that a total mass of the particles (p) comprises at least 0.5%

by mass of compound (C) and thus thereby obviates the rejection to claim 14 with regard to the percentage of mass which compound (C) comprises.

Based on the foregoing, Applicants respectfully request that the rejection to claims 1-15 and 24 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claims 1-15 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Amiel, "Macromolecular Assemblies Generated by Inclusion Complexes Between Amphiphilic Polymers and  $\beta$ -Cyclodextrin Polymers in Aqueous Media" (hereinafter "Amiel"). Applicants respectfully submit that contrary to the rejection, the present aqueous dispersion is not obvious in view of Amiel.

In response to the objection raised, Amiel does not teach the claimed dispersion of particles having a mean hydrodynamic diameter between 80 and 5000 nm wherein the particles comprise compounds (A) and (B) as claimed. Applicants acknowledge that the Examiner is correct that Amiel does not disclose the claimed particle ranges. However, Applicants respectfully disagree with the Examiner's allegation that one would have been motivated to create complexes comprising various molecules to achieve the claimed aqueous dispersion of particles.

Applicants respectfully submit that the Examiner has failed to provide any reasonably apparent reason why one of ordinary skill in the art would have modified the disclosure of Amiel to arrive at the claimed aqueous dispersion of particles. In order for it to be obvious to one of ordinary skill in the art to modify a reference, there must be a reasonably apparent reason which would lead one of ordinary skill in the art to modify one or more references to arrive at the claimed invention, see, e.g., *KSR International*. One reasonably apparent reason would be if one of ordinary skill in the art would have

known that there would have been a benefit from modifying the reference in a manner to arrive at the claimed invention. However, nowhere in Amiel or anywhere in the art is there any disclosure indicating that one would wish to have larger particles such as the claimed particles. Moreover, nowhere in Amiel nor anywhere in the art is there any disclosure which would describe any benefit for having larger particles.

Nothing in Amiel would lead one of ordinary skill in the art to modify the Amiel aggregate to form the claimed particles which comprise the claimed aqueous dispersion (Amiel Decl., ¶ 11). Amiel is directed to a very specific aggregate composition with a specific aggregate size (Amiel Decl., ¶ 11). Nowhere in Amiel or anywhere in the art is there any teaching of any benefit to having large particles similar to those in Amiel (Amiel Decl., ¶ 11). Therefore, nowhere in the art is there any disclosure which would lead one of ordinary skill in the art to believe that there would be any benefit to modify Amiel to have the claimed particle size or particular constituents of compounds (A) and (B) in their claimed amounts.

Further, it would be contrary to the teaching of Amiel to form particles having the claimed size. Amiel is directed to a very specific complex of polymers with  $\beta$ -cyclodextrin polymers in an aqueous medium (Amiel Decl., ¶ 11). In particular, the reference is specifically directed to an aqueous solution and not a dispersion as claimed. It would be contrary to its teaching which is directed to a solution of polymers to modify the constituents to result in a dispersion of particles having the claimed size since Amiel is specifically directed to a solution with specific properties as disclosed (Amiel Decl., ¶ 11). More importantly, Amiel is specifically directed to forming an aqueous solution of amphiphilic polymers and thus it is important that a particular

solution be formed (Amiel Decl., ¶ 11). Conversely, the present invention is directed to a dispersion and thus a completely different aqueous composition. Accordingly, one of ordinary skill in the art would not modify the composition of Amiel to form a dispersion having the particle size as claimed as doing so would thwart the teaching of Amiel.

Moreover, the specific claimed composition provides an unexpected beneficial result which would have been unknown from the prior art (Amiel Decl., ¶ 10). Specifically, the claimed composition inherently results in features and advantages which would have been unknown to one of ordinary skill in the art from Amiel (Amiel Decl., ¶ 10). In particular, the claimed composition provides enhanced stability, and thus a completely different composition from that of Amiel (Amiel Decl., ¶ 10). As described in the present specification and supported in the Amiel Decl., and as acknowledged by the Examiner, the aggregates taught by Amiel differ from the present particles and, in particular, they differ based on their stability. The Amiel reference teaches that a mixture Dextran-Adamantan with  $\beta$ -cyclodextrin/epichlorohydrin oligomers : 50/50 (w/w) leads to aggregates (page 71). Further, Amiel Figure 11 shows that the hydrodynamic radius of the aggregates depends in the adamantan concentration. The radius indicated in Figure 11 is lower than 30 nm, and is therefore lower than the radius of the particles contained in the claimed composition (i.e. radius between 40 and 2500 nm/diameter between 80 to 5000 nm). Thus, the particles of the present invention differ from the article's aggregate in that they are larger (see Amiel Decl., ¶ 8).

Furthermore, the claimed particles have enhanced stability which is not present in the aggregate of Amiel (Amiel Decl., ¶¶ 9-12). The present invention is specifically

directed to a thermodynamically stable system as described in the present specification, page 4, second paragraph. As a result, the present composition allows for storage and dilution of the claimed composition since the compound is stable (Amiel Decl., ¶ 9). Nowhere in Amiel is there any disclosure which would lead one of ordinary skill in the art to form a stable aggregate (Amiel Decl., ¶¶ 9-10). Furthermore, there is no disclosure in Amiel to enable one of ordinary skill in the art to modify the aggregate of Amiel to result in the inherent stability which results necessarily from the claimed invention (Amiel Decl., ¶¶ 9-10).

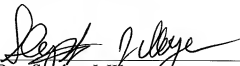
In order to demonstrate the enhanced stability of the claimed composition over that of Amiel, as described in the Amiel Decl., ¶ 12, an experiment was conducted in which a sample of the claimed composition and a sample of the Amiel composition were spun in a centrifuge resulting in the claimed dispersion forming a pellet whereas the aggregate in Amiel did not (see Amiel Decl., ¶ 12). Accordingly, the claimed composition is novel in view of the composition of Amiel.

Based on the foregoing, Applicants respectfully request that the rejection to the claims as being obvious in view of Amiel be withdrawn.

In view of the foregoing, Applicants respectfully submit that the present application is in condition for allowance.

Respectfully submitted,

Date: March 4, 2009

  
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